

~~MILLER, V.Ya.~~, professor.; KHOKHLOV, V.G., kandidat tekhnicheskikh nauk.;  
BABUSEKIN, V.M., inzhener.

"Sintering of iron ores by A. M. Parfenov. Stal' 17 no.3:286-288  
Mr '57. (MLRA 10:4)

1. Ural'skiy institut chernykh metallov.  
(Sintering) (Iron ores)

SOV/137-58-10-20388

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 5 (USSR)

AUTHORS: Babushkin, N. M., Miller, V. Ya., Shamarin, V. A.

TITLE: Obtaining a Sinter of High Basicity from Akkerman Concentrates and Fines of Novo-Kiyevskiy Ores (Polucheniye aglomerata s vysokoy osnovnost'yu iz akkermanovskikh kontsentratov i vysevov Novo-Kiyevskikh rud)

PERIODICAL: Tr. N. -i. i proyekt. in-ta "Uralsmekhanobr", 1958, Nr 2, pp 42-55

ABSTRACT: The ores of the Akkerman and the Novo-Kiyevskiy occurrences are lean disseminated limonites (32 and 39% Fe, respectively) in an acid gangue. The Akkerman ores concentrate well by magnetic roasting. The Fe contents of the concentrate on dry magnetic separation are as much as 42-45% and as much as 55% by the wet process. The ores of the Novo-Kiyevskiy deposit do not lend themselves to effective concentration. In accordance with the Mekhanobr project, the composition of the ore component of the sinter mix at the Novo-Troitsk sinter plant will be the following: Akkerman concentrate (6-0 mm fraction) 73.3%;

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Novo-Kiyevskiy ore fines (12-00 mm fraction) 18.5%;

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Obtaining a Sinter of High Basicity (cont.)

blast-furnace flue dust 6.6%; scale 1.6%; design basicity of the  $\text{CaO/SiO}_2$  sinter 0.9%. A study was made of the possibility of obtaining a fluxed sinter of high basicity from a mix of this composition. It is established that the basicity of the sinter may be increased to 1.5, and the optimum conditions for sintering this charge are studied. It is recommended that the upper limit for comminution of the limestone be reduced from 3 to 1-1.5 mm, and that mechanical screen shaking on self-balancing screens be introduced.

E. V.

1. Ores--Processing    2. Ores--Properties    3. Ores--Sintering

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MILLER, V.Ya.; IVANOV, A.I.

Properties and means of complete utilization of red slimes. Trudy  
Inst. met. UFAN SSSR no.2:257-262 '58. (MIRA 12:4)  
(Aluminum industry--By-products)

MILLER, V. YA.

133-58-3-1/29

AUTHORS: Miller, V.Ya., Professor, and El'kin, S.A., Engineer

TITLE: Technical and Economical Expediency of Utilising Steam-Air Blast in Blast Furnaces (Tekhniko-ekonomicheskaya tseleso-obraznost' ispol'zovaniya parovozdushnogo dut'ya v domennykh pechakh)

PERIODICAL: Stal', 1958, Nr 3, pp 193 - 202 (USSR)

ABSTRACT: The influence of the concentration of hydrogen in the hearth gases on the velocity of reduction of iron oxide was investigated under laboratory conditions. The experimental procedure and apparatus (Fig.1) used are described in some detail. The main feature of the experimental technique used was that the reducing gas of a given composition was passed at a given linear velocity through a channel drilled in an ore specimen and the reaction products collected in absorption tubes. Compositions of the reducing gas were those which can be obtained by using dry and moisture-enriched gas (Fig.2) The ore specimens were made from a magnetite concentrate (particle size 0 - 0.11 mm) compressed under a pressure of 867 kg/cm<sup>2</sup> into briquettes 28 mm in diameter and 100 mm long, ignited in a stream of air at 1 000 °C. The results of the initial experiments in which the influence of the nature of the gas stream (Re 496-2423), linear velocity of the gas and the

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amount of gas per  $1 \text{ cm}^2$  of the initial surface on the velocity of reduction of iron oxides at  $900^\circ \text{C}$  were investigated are given in Tables 1 and 2 and Figs. 3 and 4. The influence of the concentration of hydrogen in the reducing gases on the velocity of reduction at 800, 900 and  $1000^\circ \text{C}$  is shown in Table 3 and Figs. 5, 6 and 7. It was found that at a constant consumption of gas per unit of the ore surface area, changes in the linear velocity of the gas from 5.8 to 28.4 m/sec, i.e. changes corresponding to the transfer from laminar to turbulent flow, have no influence on the velocity of reduction of iron oxides or on the degree of utilisation of the reducing ability of the gas which under experimental conditions was proportional to the concentration of  $\text{CO}_2$  in the outgoing gas. An increase in the specific gas consumption (per unit surface area of the channel in ore) from 0.76 to 3 litres/ $\text{cm}^2 \text{ min.}$  is accompanied by an increase in the velocity of reduction of 83% with a simultaneous decrease in the concentration of carbon dioxide in the outgoing gas from 1.40 to 0.66%. It is pointed out that the relationship between the specific consumption of gas, velocity

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of reduction and the concentration of carbon dioxide in the outgoing gas (Fig.4) indicates that an increase in the rate of reduction obtained on increasing the specific consumption of the gas is caused by decreasing the mean active concentration of carbon dioxide in the gas passing through the channel in the specimen. Thus, the velocity of the process of reduction decreases on addition of a small proportion (below 1%) of carbon dioxide to the reducing gas. Hydrogen in the reducing gas has no substantial influence on the character of change of velocity with time. The experimental results (in which hydrogen concentrations corresponding to steam additions up to 120 g/cm<sup>3</sup>) indicate that an increase in the hydrogen concentration in gas by 1% (absolute) increases the velocity of reduction of iron oxides within temperature range 800-1 000° on average by 4.7%. On the basis of the heat required for the decomposition of water and the calculated increase in the proportion of the indirect reduction caused by hydrogen, the minimum increase in the blast temperature required to compensate for heat losses was calculated as 4.7 °C per g of steam.

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added to 1 m<sup>3</sup> of blast. It is pointed out that one of the causes of the beneficial influence of moisture in blast on the smoothness of furnace operation is an increase of the oxidising zone in front of the tuyeres. An investigation of the composition of gas along the hearth radius in front of the tuyeres of Nr 1 furnace of the Alapayevskiy kombinat (Alapayevsk Combine) is quoted as proof of the above statement (Figs. 8 and 9). It is shown by evaluating the size of the combustion zone from the distance at which CO<sub>2</sub> disappears that even when the heat required for the decomposition of moisture is more than compensated by an increase in the blast temperature (7 ° per g H<sub>2</sub>O) the size of the combustion zone is larger than with a blast of a lower moisture content. The size of the combustion zone remains unchanged only when the blast temperature is increased by 11 ° per gram of introduced moisture. There are 3 tables, 9 figures and 4 references, 3 of which are Soviet and 1 English.

ASSOCIATION: Ural'skiy institut chernykh metallov  
(Ural Institute of Ferrous Metals)

AVAILABLE: Library of Congress  
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S/133/60/000/011/002/023  
A054/A029

AUTHORS: Chukin, V.V., Candidate of Technical Sciences, Miller V.Ya.,  
Professor, Toporkov, S.D., Candidate of Technical Sciences,  
Karelin, V.G. Engineer, Bogoslovskiy, V.N., Engineer, Leont'yev,  
L.I., Engineer

TITLE: Fluidized Magnetic Conversion of the Lisakovsk Iron Ores

PERIODICAL: Stal', 1960, No. 11, pp 965-971

TEXT: The magnetic roasting of Lisakovsk iron ore was investigated by the UFAN Institute of Metallurgy and by the Uralmekhanobr in cooperation with the Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgicheskoy teplo-tekhniki (All-Union Scientific Research Institute of Metallurgical Heat Technique. The kinetics of roasting were examined on a laboratory scale (in the UFAN by L.I. Leont'yev under the supervision of Professor V.Ya. Miller), the aero- and hydrodynamics of the fluidized bed were investigated in a transparent model while experiments were also carried out in a roasting furnace on a semi-industrial scale. The iron ore tested consisted of 35-37% Fe, 0.23% FeO, 26-28% SiO<sub>2</sub>, 10-13% hydrate water and 8-10% hygroscopic water; the 0-2 mm fraction in this ore amounted to 80%. In the laboratory equipment (a vertical, tubular  
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# Fluidized Magnetic Conversion of the Lisakovsk Iron Ores

resistance furnace and a ceramic reaction tube, 20 mm in diameter) 25 g of the iron ore (1-3 mm fraction) was calcinated. The sample was heated up to 700°C by flue gases having a composition which corresponds to that of the actual operation. Next the sample was crushed to 0-0.25 mm size and enriched in a humid magnetic analyzer, in which the intensity of the magnetic field was 900 oersteds. Extraction of iron was most intensive (up to 92%) when increasing the (CO+H<sub>2</sub>) content in the gas to 2.5%; however, at such a high degree of extraction the rate of reduction of iron oxide to magnetite amounted to only 50%. Maximum extraction can be obtained when the quantity of reduction agents in the gas amounts to 3.7% (61.5% iron). Since there were 3.7% reducing agents in the gas, the optimum enriching results were obtained after calcination at 800°C, while the magnetizability of the ore suddenly increases when reducing the roasting temperature to 700°C. Tests were also carried out with various fractions (1-7 mm) and at various temperatures. When roasting in a neutral medium (purified nitrogen) at about 800°C the magnetizability of the ore increased considerably: the concentrate contained more than 59% Fe and also about 7.5% bivalent FeO. In order to establish the nature of the magnetic phases, X-ray structural analyses were carried out on crude and calcinated ores in nitrogen

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# Fluidized Magnetic Conversion of the Lisakovsk Iron Ores

gas at 800°C and it was found that the high degree of magnetization was due to the formation of unbalanced magnetic ferrum-oxides with distorted crystal lattices in the decomposition process of hydrogoethite upon rapid heating, but also due to the accelerated reduction processes during the transformation of crystal lattices of ferro-hydroxides. The tests and calculations suggested that the speed of magnetic roasting is not so much limited by the fact that crystal-chemical transformations take place, but rather more by the dehydration rate of the ore, i.e., by the heating rate of its particles. The aero-hydrodynamics of the fluidized bed were tested on a transparent model, the main parts of which are a chamber, a worm-type feeder, a cyclone and a bunker. The effect of the air velocity in the chamber on the fluidized bed was examined and it was found that the specific resistance of the fluidized bed decreases with the height of the bed and also with the increase of the average air velocity due to the increasing porosity of the bed. The field of concentration, the granulometric structure of the dust within the chamber, the time during which the dust stayed in the chamber were also examined. In the roasting furnace tests were carried out according to four schemes (with reducing agents in the gas from 0.85 to 4.5% and by feeding ore in amounts of 85 to 145 kg/h). It was found that when applying di-

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viding walls in the heated bed, the distribution of particles during their stay in the chamber improved considerably, and that the chambers with rectangular cross sections were more suitable than those with circular cross sections. The best enriching results were obtained by crushing the calcinated ores to 0 - 0.2 mm and by recovering the free o8lites (mainly 0.1 - 0.2 mm in size). At such a degree of crushing the concentrate contained 58.04 - 58.44% Fe, the yield in calcinate ore was 67.89 - 65.79%, while the quantity of extracted iron amounted to 98.15 - 97.22%. There are 9 figures and 2 tables. ✓

ASSOCIATION: VNIIMT, Uralmekhanobr, institut metallurgii UFAN (UFAN Metallurgical Institute)

Card 4/4

CHUKIN, V.V., kand.tekhn.nauk; TOPORKOV, S.D., kand.tekhn.nauk;  
MILLER, V.Ya., prof.; KARELIN, V.G., inzh. LEONT'YEV, L.I., inzh.

Magnetizing roasting of Lisakovskoye deposit iron ores in Gor.  
zhur. no.6:60-64 Je '61. (MIRA 14:6)  
(Kustanay region--Iron ores)  
(Ore dressing)

MILLER, V.Ya.; MOLEVA, N.G.; UTKOV, V.A.

Effect of the phase composition and basicity on the quality of  
manganese sinters from Polunochnoye deposit ores. Trudy Inst.  
met. UFAN SSSR no.7:79-84 '61. (MIRA 16:6)  
(Polunochnoye region--Manganese ores)  
(Polunochnoye region--Carbonates)  
(Sintering)

MILLER, V.Ya.; GUREVICH, A.M.; UTKOV, V.A.

Sintering manganese concentrate from Polunochnoye deposit ores at  
Gora Blagodat' Plant No. 1. Trudy Inst. met. UFAN SSSR no.7:85-88  
'61. (MIRA 16:6)

(Polunochnoye region--Manganese ores)  
(Polunochnoye region--Carbonates)  
(Sverdlovsk Province--Sintering)

MILLER, V.Ya., prof.

Physicochemical properties of titanium-magnesium slags with a high alumina content. Stal' 21 no.5:391-397 My '61. (MIRA 14:5)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.  
(Slag--Testing)



MILLER, V.Ya., prof.; BAZILEVICH, S.V., kand.tekhn.nauk; KHUDOROSHKOV,  
I.P., inzh.; MAYZEL', G.M., inzh.

Investigating the strength of sinter. Stall: 21 no. 9:769-775  
S '61. (MIRA 14:9)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat i Institut  
metallurgii Ural'skogo filiala AN SSSR.  
(Sintering)

MILLER, V.Ya.; BAZILEVICH, S.V.; MAYZEL', G.M.

Composition of the gaseous phase during the sintering of magnetite concentrates. Obog.rud. 7 no.1:29-34 '62. (MIRA 15:3)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.  
(Sintering) (Gases—Analysis)

BAEUSHKIN, N.M.; MILLER, V.Ya.

Effect of kind and size of fuel on the rate of the sintering  
process and quality of the sinter. Stal' 22 no.2:101-106 F  
'62. (MIRA 15:2)

(Sintering)

MILLER, V.Ye.; BAZILEVICH, S.V.; RAVIKOVICH, I.M.; KHAUDOROSHKOV, I.P.;  
Prinimali uchastiye: Vernikovskiy, K.B.; SOTNICHENKO, A.S.;  
PAKHOMOV, Ye.A.; BUNEYEVA, O.K.

Production of fluxed sinter using a high basicity sinter as flux.  
Stal' 22 no.12:1057-1060 D '62. (MIRA 15:12)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat i Vsesoyuznyy  
nauchno-issledovatel'skiy institut mekhanicheskoy obrabotki  
poleznykh iskopayemykh.  
(Sintering)

MILLER, V.Ya.; IVANOV, A.I.

Complete utilization of red muds. TSvet.met. 36 no.2:45-49 P  
'63. (MIRA 16:2)  
(Aluminum industry—By-products) (Cast iron)

MILLER, V.Ya.; UTKOV, V.A.

Results of tests done by laboratories and pilot plants on sinters  
of concentrates of Polunochnoye deposit carbonate manganese ores.  
Trudy Inst. Met. UFAN SSSR no.7:69-78 '61. (MIRA 16:6)  
u (Polunochnoye region--Manganese ores)  
u (Polunochnoye region--Carbonates)  
u (Sintering)

LUBNIN, Aleksandr Il'ich, inzh.; LIBERMAN, Semen Abramovich, inzh.;  
SKAZHENIK, Georgiy Dmitriyevich, inzh.; MILLER, Viktor  
Yakovlevich, inzh.; PETRAKOV, Andrey Ivanovich, inzh.;  
USHAKOV, Nikolay Alekseyevich, kand. tekhn. nauk; VAD'YAYEV,  
Gavriil Mikhaylovich, inzh.; TIMYANSKIY, Samuil Yakovlevich,  
arkh.; KIKIN, A.I., doktor tekhn. nauk, prof., red.; BEGAK,  
B.A., red.; SHERSTNEVA, N.V., tekhn. red.

[Designing buildings and structures for metallurgical plants]  
Proektirovanie zdaniy i sooruzheniy metallurgicheskikh za-  
vodov [By] A.I.Lubnin i dr. Moskva, Gosstroizdat, 1963.  
321 p. (MIRA 17:2)

1. Gosudarstvennyy institut proyektirovaniya metallurgiche-  
skikh zavodov (for Timyanskiy). 2. Gosudarstvennyy institut  
po proyektirovaniyu, issledovaniyu i ispytaniyu stal'nykh  
konstruktsiy i mostov (for Petrakov). 3. Tsentral'nyy nauchno-  
issledovatel'skiy i proyektno-eksperimental'nyy institut pro-  
myshlennykh zdaniy i sooruzheniy (for Ushakov).

UTKOV, V.A.; MILLER, V.Ya.; KUDINOV, B.Z.; IVANOVA, S.V.

Increasing the strength of high-basicity sinters and their  
resistance to spontaneous decomposition. Izv. vys. ucheb. zav.;  
chem. met. 6 no.5:34-37 '63. (MIRA 1617)

1. Institut metallurgii Ural'skogo filiala AN SSSR.  
(Sintering)



BERMAN, Yu.A.; MILLER, V.Ya., prof.

Production of metallized pellets from thin iron concentrates.  
Obog. rud 9 no.4:21-26 '64. (MIRA 18:5)

MILLER, Viktor Yakovlevich, inzh.; KORCHAGIN, Vladimir  
Aleksandrovich, inzh.; TOLOKONNIKOV, Vladimir Gerasimovich,  
inzh., MUKHANOV, K.K., kand. tekhn. nauk, retsenzent;  
KUZNETSOV, V.V., inzh., retsenzent; ZELYATROV, V.N., inzh.,  
nauchn. red.

[Steel structures in a blast furnace - gas purification  
complex] Stal'nye konstruksii kompleksa domennoi pechi i  
gazoochistki. Moskva, Stroiizdat, 1965. 278 p.  
(MIRA 18:4)

MILLER, V.Ya.; IVANOV, A.I.; UTKOV, V.A.

Behavior of sulfur and alkalies during sintering of red slimes.  
Zhur. prikl. khim. 38 no.11:2407-2410 N '65.

(MIRA 18:12)

1. Institut metallurgii Ural'skogo filiala AN SSSR. Submitted  
July 18, 1964.

BALDIN, V.A.; GLADSHTEYN, L.I.; MILLER, V.Ya.; SIDOROV, A.N.

Causes of the breakdown of a conveyor gallery. Prom. stroi.  
43 no. 11:13-17 '65. (MIRA 18:12)

MILLER, V.Ye., prof.; LEONT'YEV, L.I., inzh.; UTKOV, V.A., inzh.

Production of metallized pellets from finley ground concentrates.  
Stal' 21 no.2:102-105 P '61. (MIRA 14:3)

1. Institut metallurgii Ural'skogo filiala Akademii nauk SSSR.  
(Ore dressing)

KACZYNSKA, Wanda; MILLER, Wieslaw

Cardiomegaly in fibro-elastic thickening of the endocardium as a cause of total atelectasis of the left lung. Pediat. pol. 37 no.11: 1195-1201 '62.

1. Z Kliniki Chorob Dzieci Slaskiej AM Kierownik: prof. dr med.

A. Chwalibogowski.

(ENDOCARDIAL FIBROELASTOSIS)

(ATELECTASIS)

(HEART ENLARGEMENT)

MILLER, Wieslaw; MASZEWSKA-KUZNIARZ, Krystyna

A case of ectodermal dysplasia. Pediat. pol. 38 no.9:841-844  
S '63.

1. Z Kliniki Chorob Dzieci Slaskiej AM w Zabrze Kierownik:  
prof. dr med. A. Chwalibogowski.  
(ECTODERMAL DEFECT, CONGENITAL)

KORCZOWSKI, Ryszard; MILLER, Wieslaw

Faulty procedure in the management of cases of chronic auriculo-ventricular block. Pediat. Pol. 39 no.2:169-173 F'64

1. Z Kliniki Chorob Dzieci Slaskiej AM w Zabrze; kierownik:  
prof.dr.med. A Chwalibogowski.

\*



MILLER, Wieslaw; KORCZOWSKI, Ryszard

Strongyloidosis in a 7-year-old boy. Pediat. Pol. 39 no.6:  
711-714 Je '64.

1. Z Kliniki Chorob Dzieci Slaskiej Akademii Medycznej w  
Zabrze (Kierownik: prof. dr med. A. Chwalibogowski [deceased]).

MILLER, Wieslaw

Contribution to the etiopathogenesis and therapy of idiopathic  
pulmonary hemosiderosis. Ped. Pol. 40 no.1:79-83 Ja '65

1. Z Kliniki Chorob Dzieci Slaskiej Akademii Medycznej w  
Zabrze (Kierownik: prof. dr. med. A.Chwalibogowski [deceased]).

1. MILLER, Ya., Eng.
2. USSR (600)
4. Electric Wiring
7. Connecting aluminum wires to electric motors and shelters.  
Prom. energ. 9 No. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953, Unclassifi

MILLER, Y. S.

AID P - 2972

Subject : USSR/Electricity  
Card 1/1 Pub. 29 - 22/35  
Author : Miller, Ya., S., Eng.  
Title : Concealed wiring in insulating semi-hard rubber tubes  
Periodical : Energetik, 5, 27, My 1955  
Abstract : The "Rules for the Establishment of Electrical Installations" have a chapter on "Wiring". The author discusses chs. 14, 53, 56 and 61 of this chapter which concern concealed conduits and the possibility of pulling them out of the tubes. He proposes the substitution in certain cases of the removable wires in tubes by a cable in vinylite coating of the VRG type.  
Institution : None  
Submitted : No date

MILLER, Ya.S., inzhener.

Saving materials in electric installation work. *Energetik* 4 no.4:  
7-9 Ap '56. (MLRA 9:7)  
(Electric engineering--Materials)

MILLER, Ya.S., inzhener.

Increasing labor productivity in installing electric lighting in  
dwellings. Energetik 4 no.6 Jo '56. (MLRA 9:8)  
(Electric lighting--Installation)

MILLER, YE. I.

USSR/Hydrology  
Oceanography

1947

"Determination of Gold in Matsista Waters," K. S. Zverev, V. M. Levchenko, Ye. I. Miller, 3 pp

"Gidrokhim Materialy" Vol XIII

Establishes content of gold in fresh waters diluting Matsista waters, under subterranean conditions, on basis of investigations carried out.

PA 54T99

MILLER, Ye.L., inzh.

Railroad equipment at the Exhibition of Achievements of the National  
Economy. Zhel.dor.transp. 45 no.9:87-88 S '63. (MIRA 16:9)  
(Railroads—Equipment and supplies)  
(Moscow—Exhibitions)



MILLER, Ye.V., kandidat tekhnicheskikh nauk.

~~Energy balance of the machinery manufacturing plant. Prom.energ.11~~  
no.12:1-6 D '56. (MIRA 10:1)

1. Leningradskiy Elektrotekhnicheskiy institut imeni Ul'yanova (Lenin).  
(Electric power)

MILLER, Ye.V....dotsent, kand.tekhn.nauk; TIMOFEYEV, V.A., prof., doktor  
tekhn.nauk, otv. red.; KHAGEMEYSTER, Ye.S., red.

[Principles of electric driving; instructions and problems]  
Osnovy elektroprivoda; metodicheskie ukazaniya i kontrol'nye zadaniya.  
Fakul'tet: elektro-energeticheskii. Spetsial'nost': "elektrifikatsiya  
prompredpriyatii i ustanovok." Leningrad, 1958. 26 p. (MIRA 12:1)

1. Severo-zapadnyy zaachnyy politekhnicheskii institut. 2. Zaveduyu-  
shchiy kafedroy elektrifikatsii prompredpriyatii i ustanovok (for  
Timofeyev).

(Electric driving)

SOV/110-53-11-4/28

AUTHOR: Miller, Ye.V. (Cand.Tech.Sci.)

TITLE: An Analytical Method of Calculating Starting and Braking Resistances for Induction Motors (Analiticheskiy metod rascheta puskovykh i tormoznykh soprotivleniy dlya asinkhronnykh dvigateley).

PERIODICAL: Vestnik Elektromyshlennosti, Nr.11, 1958, pp.16-19 (USSR)

ABSTRACT: Approximate methods of calculating starting resistances use simplified forms of the equation for the mechanical characteristics. The resistance values can be calculated accurately by a graphical method described in previously published work, as indicated in Fig.1. A series of successive approximations is usually necessary to achieve uniform torque changes at each resistance step; this is, of course, very inconvenient. The method of calculation proposed in this article has the same basis as the

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An Analytical Method of Calculating Starting and Braking Resistances for Induction Motors.

graphical method of Fig.1, but the necessary relationships are obtained analytically from expression (1) which represents the mechanical characteristics of the motor and from the equations of lines radiating from the origin of coordinates. An expression is then written down for the torque and formulae are derived for the slip and for the requisite values of resistance. The family of lines corresponding to reverse-current braking is shown in Fig.2 and the modified equations for this case are given. By way of example, determinations are made of the starting resistance for a motor type MT-22-6, 7.5 kW, 945 r.p.m. Both accurate and approximate methods of calculation are demonstrated. It is concluded that the accurate analytical method of calculation is a reasonably simple way of designing starting and braking resistances. The use of approximate expressions may

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SOV/110-58-11-4/28

An Analytical Method of Calculating Starting and Braking Resistances  
for Induction Motors.

result in an unnecessarily large number of resistance  
stages. There are 2 figures and 2 Soviet references.

SUBMITTED: February 17, 1958.

1. Electric motors--Properties
2. Electric motors--Performance
3. Mathematics
4. Torque--Measurement

Card 3/3

MILLER, Yevgeniy Vladimirovich; MALYAREVSKIY, B.I., nauchnyy red.;  
VOL'PE, L., red.

[Fundamentals of the theory of electric drives; study manual]  
Osnovy teorii elektroprivoda; uchebnoe posobie. Leningrad,  
Severo-Zapadnyi zaachnyi politekhn.in-t. No.1. 1960. 242 p.  
(MIRA 14:1)  
(Electric driving--Handbooks, manuals, etc.)

MILLER, Ye.V. (Leningrad)

Transistorized contactless switching elements [with summary  
in English]. Avtom. i telem. 21 no.7:1035-1045 J1'60.

(MIRA 13:10)

(Switching theory) (Automatic control)

MILLER, Yevgeniy Vladimirovich; BABAYEV, O.B., red.

[Contactless logic components using transistors and  
their application] Beskontaktnye logicheskie elementy  
na poluprovodnikakh i ikh primeneniye. Moskva, Izd-vo  
"Energiia," 1964. 79 p. (Biblioteka po avtomatike,  
no.97) (MIRA 17:8)



MILLER, Yevgeniy Vladimirovich; SMIRNOV, Ye.M., inzh., ratsenzent;  
DILKIN, B.Yu., dots., ratsenzent; BERGATINA, Ye.P., red.

[Electrical equipment and automation of general industrial  
mechanisms] Elektrooborudovanie i avtomatizatsiya obshche-  
promyshlennykh mekhanizmov. Moskva, Vysshaya shkola, 1965.  
302 p. (MIRA 18:12)

MILLER, Ye.V., kand.tekhn.nauk; MAKAROV, A.K., inzh.

Comparative evaluation of the economic effectiveness of  
switching commutational and noncontact-type systems of  
automatic control. Elektrotehnika 36 no.12:40-43  
D '65. (MIRA 19:1)

L 33115-66

ACC NR: AP6024083

SOURCE CODE: UR/0144/66/000/002/0235/0236

AUTHOR: Zav'yalov, A. S.; Get'man, A. A.; Molchanov, V. D.; Krasnyuk, N. P.;  
Agranovskiy, K. Yu.; Berger, A. Ya.; Greyer, L. K.; Yezakov, V. P.; Miller, Ye. V.;  
Pyatman, K. I.; Abryutin, V. N.; Gubanov, V. V.; Oranskly, M. I.; Yevseyev, N. Ye.;  
Morkin, G. B.; Sinol'nikov, Ye. M.; Avilov-Karnaukhov, B. N.; Bogush, A. G.;  
Dolyayev, I. P.; Pekkor, I. I.; Chernyavskiy, F. I.

ORG: none

TITLE: O. B. Bron (on his 70th birthday)

SOURCE: IVUZ. Elektromekhanika, no. 2, 1966, 235-236

TOPIC TAGS: electric engineering personnel, circuit breaker

ABSTRACT: Osip Borisovich Bron was born in 1896 in Klitsi. In 1920, he graduated from the physics-math faculty of Khar'kov Technological Institute. He became a professor in 1930. He defended his doctor's thesis in 1940. During the second world war, he was in the navy. After demobilization in 1950, Engineer Colonel Bron went to work teaching at the Leningrad Industrial Correspondence School. He became the head of the Chair of Theoretical Bases of Electrical Technology in 1958. He is closely associated with scientific and development work, and has cooperated closely in this area with the Leningrad "Elektrosila" plant since 1946. His work has been in the areas of spark-damping and high-power circuit breakers. He has published over 140 scientific works and 19 inventions. [JPRS]

SUB CODE: 05, 09 / SUBM DATE: none

Cord 1/1

MILLER, YE. YE.

5-6-10/42

AUTHOR: None Given

TITLE: Chronicle of the Activity of the Petrography Section (Khronika deyatel'nosti petrograficheskoy sekti)

PERIODICAL: Byulleten' Moskovskogo Obshchestva Ispytateley Prirody, Otdel Geologicheskii, 1957, # 6, pp 118-122 (USSR)

ABSTRACT: The following reports were delivered in the Petrographic Section from 4 April to 7 June 1957:  
 M.A. Petrova on "Localization of Polymetal Mineralization and Hydrothermal Activity in Deposits of the Zmeinogorsk Ore Field"; Ye.Ye. Miller on "Volcanism of Upper-Proterozoic Time in the Northern Part of Central Kazakhstan and Chingiz"; V.P. Petrov on "Prospect of Petrography Development"; Yu.M. Sheynmann on "Some Regularities in Development of Trappean Formations of Plateaus"; Yu.V. Yunakovskaya on the "Application of Geophysics for Solving Some Problems of Intrusive and Effusive Rock Geology"; R.M. Yashina on "New Alkaline Province in the Southern Part of Tuva"; V.N. Shilov on "Cenozoic Volcanism of the Southern Sakhalin"; S.M. Kravchenko on "New Data on the Petrography of Intrusive Massifs in the Southern Part of the Central Crimea"; S.A. Yushko on the "Mineralogy of Lead-Zinc Mineralization of the Karatau Range"; S.K. Onikiyenko on "Some Peculiarities of Acid Devonian Effusives of the Zmeino-

Card 1/2

5-6-22/42

MILLER, YE. YE.

AUTHOR:

Miller, Ye. Ye

TITLE:

On the Upper-Proterozoic Volcanism of the Northern Part of Central Kazakhstan and Chingiz (O vulkanizme verkhnego proterozoya severnoy chasti Tsentral'nogo Kazakhstan i Chingiza)

PERIODICAL:

Byulleten' Moskovskogo Obshchestva Ispytateley Prirody, Otdel Geologicheskii, 1957, # 6, pp 136-137 (USSR)

ABSTRACT:

The author studied volcanic rocks in the north-eastern part of central Kazakhstan, between the towns of Pavlodar and Akmolinsk and in the region of the Chingiz. The centers of eruptions of the Proterozoic volcanos were located within the area from the Yerementau and Maykain anticlinoria in the north and the Chingiz in the south. These zones were geosynclinal depressions during the Proterozoic time, and volcanic seats of the central type were associated with their abyssal breaks. The volcanic activity proceeded intermittently during a long period of time.

AVAILABLE:

Library of Congress

Card 1/1

MILLER, Ye.Ye.

Lower Cambrian volcanism in eastern Kazakhstan. Izv. AN Kazakh.  
SSR. Ser. geol. no. 3:16-31 '58. (MIRA 12:1)  
(Kazakhstan--Volcanoes)

SOV/5-58-5-5/20

AUTHOR: Miller, Ye.Ye.

TITLE: On the Upper-Proterozoic Volcanism of the North-Eastern Part of Central Kazakhstan and Chingiz (O vulkanizme verkh-nego proterozoya severo-vostoka Tsentral'nogo Kazakhstana i Chingiza)

PERIODICAL: Byulleten' Moskovskogo obshchestva ispytateley prirody, Otdel geologicheskii, 1958, Nr 5, pp 63 - 79 (USSR)

ABSTRACT: The author studied volcanic rocks in the north-eastern part of Central Kazakhstan, situated between Akmolinsk and Pavlodar, and the region of the Chingiz mountain ridge and of the basin of the upper part of the Bakanas River. In the Upper Proterozoic era, the geosynclinal region was subjected to an intensive elevation process, and at the Caledonian stage, large anticlinoria replaced the Proterozoic synclines. There are three large anticlinoria in the region, the Yezementau-Niaz and the Maykain-Ekibastuz in the north-east and the Chingiz anticlinoria - in the south. It can be seen from the cross-section of the rocks of the north-east part, elaborated according to the scheme by R.A. Borukayev [Ref 1], that volcanic activity was very intensive in the

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SOV/5-58-5-5/20

On the Upper-Proterozoic Volcanism of the North-Eastern Part of Central Kazakhstan and Chingiz

Pre-Cambrian and Lower-Proterozoic eras. But the rocks of those eras were so metamorphized that the character of the initial magmatic rocks could not be detected. The first stratum in which the effusive rocks remained unchanged is the Yerementau limestone-effusive stratum, divided into two suites: the lower composed of volcanic formations and the upper composed of quartzites, jaspers and jasper-quartzites. This stratum was identified as belonging to the Upper Proterozoic era. The volcanic activity in the Upper Proterozoic era was, according to Borukayev, coordinated with the plutonic breaks along the geosynclinal troughs, in zones of junction of ascending and sinking regions. The study of the cross-section of the Yerementau limestone-effusive stratum

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SOV/5-58-5-5/20

On the Upper-Proterozoic Volcanism of the North-Eastern Part of Central Kazakhstan and Chingiz

tum indicates the alternation of volcanic and sedimentary layers of rocks. The total width of the volcanic layers is much greater than that of the sedimentary rocks. After a detailed study of cross sections taken in different places of the north-eastern part of Central Kazakhstan, the author found that the centers of the eruptions of Proterozoic volcanoes were localized in the ranges of the three above mentioned anticlinoria. The following geologists were mentioned by the author: P.N. Kropotkin, N.G. Markova, V.I. Gon'shkov, V.M. Tashchinina, G.I. Vodorezov, B.I. Borsuk, N.G. Sergiyev. There are 2 sets of profiles, 1 map, 1 table and 8 Soviet references.

Card 3/3

LYALIN, Yu.I.; MILLER, Ye.Ye.

Lower Cambrian effusives (Bochchekul' series) in the Chingiz  
geosynclinal trough. Trudy Inst. geol. nauk AN Kazakh. SSR  
no.3:68-86 '60. (MIRA 14:1)  
(Chingiz-Tau—Rocks, Igneous)

MILLER, Ye.Ye.

Tuff lavas of Kazakhstan. Trudy Lab. vulk. no.20:169-176  
'61. (MIRA 14:11)

1. Kazakhskiy gornometallurgicheskiy institut.  
(Kazakhstan--Volcanic ash, tuff, etc.)

LYALIN, Yuriy Iosifovich; MILLER, Yelena Yevgen'yevna; NIKITINA, Liliya Grigor'yevna; BORUKAYEV, R.A., akademik, otv. red.

[Volcanic formations of the Chingiz geoanticlinorium (central Kazakhstan)] Vulkanogennye formatsii Chingizskogo geoantiklinoriii (TSentral'nyi Kazakh'syan). Alma-Ata, Nauka, 1964. 165 p. au (Akademiia nauk Kazakhskoi SSR. Institut geologicheskikh nauk. Trudy, vol.11). (MIRA 18:1)

1. AN KazSSR (for Borukayev).

MILLER, Ye.Ye.

Proterozoic amphibolite formation (Yefimovka series). Trudy  
Inst. geol. nauk AN Kazakh. SSR 13:14-16 '65.

(MIRA 19:1)

MILLER, Ye.Ye.; ZARAVNYAYEVA, V.K.; ANTONYUK, R.M.

Volcanic ophiolite formation of the Rphean. Trudy Inst. geol.  
nauk AN Kazakh. SSR 13:17-50 '65. (MIRA 19:1)

MILLER, Ye.Ye.; KONSTANTINOVICH, T.V.

Volcanic spilite-keratophyre formation of the Lower Cambrian  
(Boshchekul' series). Trudy Inst. geol. nauk AN Kazakh. SSR 13:  
51-75 '65. (MIRA 19:1)

DORUKAYEV, R.A.; MILLER, Ye.Ye.

Characteristics of volcanism and cycles of igneous activity.  
Trudy Inst. geol. nauk AN Kazakh. SSR 13:251-256 '65.  
(MIRA 19:1)



ABDRAKHMANOV, K.A.; LEONOV, A.V.; LYALIN, Yu.I.; MILLER, Ye.Ye.

Second All-Union Volcanologic Conference. Izv. AN Kazakh. SSR.  
Ser.geol. 22 no.2:79-81 Mr-Apr '65. (MIRA 18:5)

1. Institut geologicheskikh nauk imeni Satpayeva, Alma-Ata.

MILLER, YU. H.

ZAKHAROV, A.B.; MILLER, Yu.A.; BELYI, K.A.

Improving measures of fire prevention in Kuznetak Basin mines.  
Ugol' 33 no.2:11-16 F '58. (MIRA 1T:2)

1. Vostochnyy nauchno-issledovatel'skiy institut.  
(Kuznetak Basin--Coal mines and mining--Fire and fire prevention)

MILLER, Yu.A., gornyy inzh.

Devices for measuring the quantity and specific weight of  
pulp. Vop. bezop. v ugol'. shakh. 1:39-48 '59. (MIRA 17:12)

MILLER, Yu.A.; LOMAYEV, Yu.N.

Increasing the airtightness of fire isolation barriers with the  
help of a silicate colloid solution. Vop.bezop.v ugol'.shakh.  
4:198-206 '64. (MIRA 18:1)

MILLER, Yu. A. (Engr.)

"Characteristion of Constructing and Operating Ultrasonic Oscillators with  
Tibar and Nickel Emitters (report was presented on the experiment of Designing,  
manufacturing and Operating Ultrasonic Generators Constructed by the Fifth  
Labratory of the Institute)"

report presented at the 13th Scientific Technical Conference of the Kuybyshev  
Aviation Institute, March 1959.

S/194/62/000/005/082/157  
D222/D309

24.1800

AUTHORS: Miller, Yu.A., and Bykhovskiy, Yu.S.

TITLE: Ultrasound generators of the KuAI

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1962, abstract 5-5-35 v (V sb. Prom. primeneniye ul'trazvuka. Kuybyshevsk. aviats. in-t, Kuybyshev, 1961, 29-37)

TEXT: The circuit diagrams and construction of two relatively simple industrial valve ultrasound-generators are described, which are distinguished by their small size, small weight and sufficiently high efficiency with reliable and stable operation. Generator  $\Gamma Y3-1, 5H$  (GUZ-1, 5N) is intended for the excitation of magnetostrictive transducers, and  $\Gamma Y3-1, 5B$  (GUZ-1, 5V) for piezoelectric ones. In order to reduce the influence of loading on the frequency and operating conditions of the generator, GUZ-1, 5V uses a circuit with two tuned circuits which are coupled by a common electron flow. The difference between GUZ-1, 5N and GUZ-1, 5V is that the anode tuned circuit for the production of the useful power is replaced by a

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Ultrasound generators of the KuAI

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periodical transformer with a ferro-magnetic core in the first one. The circuits of the generators are given and the constructional details and component units are described. [Abstractor's note: Complete translation].

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137-58-6-13152

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 281 (USSR)

AUTHORS: Borovskiy, I.B., Miller, Yu.G., Shcherbakov, A.P.

TITLE: Self-diffusion in  $\alpha$ Fe (Samodiffuziya v  $\alpha$ -Fe)

PERIODICAL: V sb.: Issled. po zharoprochn. splavam. Vol 2, Moscow, AN SSSR, 1957, pp 228-233

ABSTRACT: To determine small values of the coefficient of diffusion D (of the order of  $10^{-12}$  -  $10^{-13}$  cm<sup>2</sup>/sec) the method of consecutive removal of layers in conjunction with extended diffusion annealing (up to 40 days at 700°C) is used. Isotope Fe<sup>59</sup> was applied electrolytically onto an Fe specimen of 15-mm diam and 5-mm thickness. Electrolytic Fe served as the subject for the investigation. After annealing, several specimens were glued with salol onto a holding disc and were then polished simultaneously with powder. The thickness of each removed layer was determined to within  $\pm 5\mu$ . Also used was the anodic dissolving method, i.e., by means of taking electrolytic "prints" on filter paper moistened with an aqueous 15% NaCl solution. At 60 ma the duration of the dissolution was 2 min. The mean square error in measuring the activity of the "prints" by a

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137-58-6-13152

Self-diffusion in  $\alpha$  Fe

$\beta$ -ray counter was 1.5%. Values for D were compared at 1100°C upon removing layers off a given specimen, measuring the integral  $\gamma$  activity, taking imprints, and measuring the  $\beta$  activity. Results for the first method:  $D = 4.3 \cdot 10^{-10}$  with a 25% error; for the second method:  $D = 4.8 \cdot 10^{-10}$  cm<sup>2</sup>/sec with a 3% error. Self-diffusion was studied in the range of 705-900°. At 705-745° the presence of boundary diffusion was noted. For volumetric self-diffusion  $D = 3.2 \exp(-56500/RT)$  cm<sup>2</sup>/sec. Increasing Cr content to 1.5% raises Q and  $D_0$ , whereas a further increase in Cr to 15% brings about a decrease of Q and  $D_0$  down to the values characteristic for pure Fe. Alloying with up to 0.12% Mo lowers D. Increasing Mo up to 6% increases Q monotonously.

I.D.

1. Iron--Diffusion    2. Diffusion--Test results    3. Iron isotopes ( Radioactive)
- Applications

Card 2/2

BOROVSKIY, I.B.; GUROV, K.P.; MILLER, Yu.G.

~~Effect of chromium, molybdenum, and tungsten on the self-~~  
diffusion of iron in  $\alpha$ -solid diluted solutions. Dokl. AN  
SSSR 118 no.2:280-283 Ja '58. (MIRA 11:4)

1. Institut po metallurgii im. A.A. Baykova Akademii nauk SSSR.  
Predstavelno akademikom G.V. Kurdyumovym.  
(Iron alloys) (Diffusion)

AUTHOR: Miller, Yu. G.

20-119-3-24/65

TITLE: The Linear Expansion Coefficients of Diluted  $\alpha$ -Solid Solutions of Fe With Cr, Mo, and W (Koeffitsiyenty lineynogo rasshireniya razbavlennykh  $\alpha$ -tverdykh rastvorov Fe s Cr, Mo i W)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 3, pp. 488-489 (USSR)

ABSTRACT: In an investigation of the influence of the alloying admixtures Cr, Mo, and W upon the coefficients of auto-diffusion of  $\alpha$ -Fe in diluted solid solutions (ref. 1) the existence of a minimum in the dependence of the coefficient D on the concentration of the second components of the alloy (within the limits of from 0,05 - 0,2 atom percent) was proved. Of essential interest was the comparison of these results with the results of the concentration dependence of the linear expansion coefficient in the same alloys. In fact the linear expansion coefficient of a solid can be expressed by the second and third derivative of the potential energy of the interatomic interaction (with regard to the deviation of the atoms from the equilibrium). Therefore the linear expansion coefficient can serve as additional characteristic

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The Linear Expansion Coefficients of Diluted  $\alpha$ -Solid Solutions 20.119.3.24/65  
of Fe With Cr, Mo, and W

for the magnitude of the interatomic interaction in alloys. To compare the results, obtained in the study of the diffusion constant, with each other, the samples, used for the determination of the linear expansion coefficient, were made of the same alloys as the samples for the study of the diffusion. The cylindrical test pieces of a diameter of 6,5 mm and 65 mm length were arranged in a quartz tube of 600 mm diameter and 7 mm inner diameter, which on the bottom was closed by soldering. The expansion of the test piece was transmitted to a pointer indicator and measured exactly to 2  $\mu$ . The deflections of the pointer were taken in temperature intervals of 50°C each. The expansion of two samples at increasing temperature is illustrated in a diagram. From 250° to 850°C the test pieces expand linearly, which speaks for the constancy of the linear expansion coefficient in the mentioned interval. The values of the linear expansion coefficients are plotted in a diagram as a function of the composition of the alloys Fe-Cr, Fe-Mo, and Fe-W. In the curves for the dependence of the linear expansion coefficient  $\alpha$  on the percentage of the second components a minimum clearly can be noticed. The position of this minimum shifts from

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The Linear Expansion Coefficients of Diluted  $\alpha$ -Solid  
Solutions of Fe With Cr, Mo, and W

20-119-3-24/65

$\sim 0,05$  atom percent for the alloys Fe-W to 0,15 atom percent for the alloys Fe-Cr. In this case the decrease of the linear expansion coefficient and the minimum of the mobility, which is conditioned by the diffusion, of  $\alpha$ -iron in the alloys, practically correspond to the same concentrations of the alloying admixture. The data, obtained here, are suited as an additional proof for the formation of domains with increased strength of the interatomic binding - the so called "atom blocks" - in the solid solutions of the transition metals. There are 2 figures and 4 references, 0 of which is Soviet.

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR  
(Institute of Metallurgy imeni A. A. Baykov AS USSR)

PRESENTED: August 8, 1957, by G. V. Kurdyumov, Member, Academy of  
Sciences, USSR

SUBMITTED: July 19, 1957

AVAILABLE: Library of Congress  
Card 3/3

S/194/61/000/010/014/082  
D256/D301

AUTHOR: . Miller, Yu.G.

TITLE: Polarization rate-of-flow meter

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,  
no. 10, 1961, 32, abstract 10 A281 (Tr. Vses. in-ta  
po proyektir. organiz. energ. str-va, 1959, no. 1,  
51-70)

TEXT: A report is presented on the initial stage of work  
on devising rate-of-flow meters based upon the polarization of sub-  
stances flowing in a magnetic field between the plates of a conden-  
ser. The PD created on the plates is proportional to the rate of  
flow. When measuring the rates for conducting liquids the effect  
of el.-magn. induction is superimposed upon the polarization effect,  
however, this does not affect the PD. The theoretical conclusions  
were verified using a model with water. The model consisted of a  
perspex square-shaped angular tube placed into the gap of a U-shaped

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Polarization rate-of-flow meter

S/194/61/000/010/014/082  
D256/D301

core of an electromagnet. The plates of the condenser were made of glass foil stuck onto the outside of the top and bottom walls of the perspex tube. The output signals were amplified using a photo-electrometric amplifier with a galvanometer graduated in the units of the rate-of-flow. The construction requirements of rate-of-flow meters for industrial measurements are presented together with remarks concerning the insertion of the devices inside pipelines. Methods of measurements for water and oil are discussed and it is shown that the error for water does not exceed  $\pm 0.6\%$  and that for oil  $\pm 1\%$ . 10 figures. 31 references. [Abstracter's note: Complete translation]

Card 2/2

67521

SOV/155-59-1-27/30

24.7000

~~18(7), 24(7)~~

AUTHORS:

Gurov, K.P., and Miller, Yu.G.

TITLE:

On the Dependence of Concentration of the Coefficient of Self-Diffusion in Diluted Hard Solutions on the Base of Transition Metals

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki, 1959, Nr 1, pp 173-178 (USSR)

ABSTRACT:

The authors join the paper of I.B. Borovskiy [Ref 1] in which it is proved that the variation of the coefficient of the self-diffusion in binary hard solutions on the base of  $\alpha$ -iron has a distinct non-monotone character for small concentrations. In [Ref 1,5,6,7,8] these phenomena are explained by the electronic structure and the forces of interatomic bindings. In the present paper the authors state that the mobility of the atoms is different in three domains [Ref 9]. Every domain considered as a macro-volume has an own coefficient  $D_i$  ( $i = 1,2,3$ ) of self-diffusion. Now the experimentally measured coefficient is defined as the averaged coefficient of the self-diffusion in a polyphase system :

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On the Dependence of Concentration of the Coefficient of Self-Diffusion in Diluted Hard Solutions on the Base of Transition Metals SOV/155-59-1-27/30

$$(1) \quad D = A_1 D_1 + A_2 D_2 + A_3 D_3$$

The weight functions  $A_i$  are determined from geometrical considerations. The theoretical D-curve constructed in this manner shows a very good agreement with the experiment in the region of small concentrations.

The authors mention A.A. Smirnov, and M.A. Krivoglaz.

There are 11 references, 6 of which are Soviet, 1 English, 2 Swedish, and 2 American.

ASSOCIATION: Institut metallurgii imeni A.A. Baykova (Institute of Metallurgy imeni A.A. Baykov) ✓

SUBMITTED: January 23, 1959

Card 2/2

26(5)

AUTHORS: Garber, R. I., Miller, Yu. G.

05743

SOV/32-25-10-32/63

TITLE: Accelerated Method of Computing the Oscillation Decrement From the Oscillograms

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 10, p 1235 (USSR)

ABSTRACT: In investigating the internal friction in metals, the oscillation decrement is generally computed from the oscillograms by measuring the amplitudes, and a diagram of the dependence of the logarithm of the amplitude on the number of integral oscillations is then drawn. The tangent of the angle of inclination of the straight line obtained represents the decrement. As in the case of several oscillograms much time is required for measuring the amplitudes, it is more convenient to draw a net of curves, or a series of patterns, according to the equation

$$Y = \pm A_0 e^{-\delta n} \quad (1)$$

(n = number of integral oscillations, and  $\delta$  = logarithmic oscillation decrement). If the oscillation period, or the scale of the oscillograms obtained, is changed simultaneously with the damping value, the diagrams drawn according to

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Accelerated Method of Computing the Oscillation Decrement From the Oscillograms

equation (1) are photographed and projected on the oscillogram on an enlarged scale. The scale of enlargement should always be chosen in such manner that the number of periods in the oscillogram agrees with the interval of the values for  $n$  (taken from equation (1)) (Fig). There is 1 figure.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk USSR  
(Physical-technical Institute of the Academy of Sciences of the UkrSSR)

Card 2/2

MILLER, Yu.G.

Young's modulus and internal friction in Fe-W  $\alpha$ -solid solutions.

Trudy Inst. met. no.6:20-24 '60. (MIRA 13:8)

(Solutions, Solid--Testing) (Elasticity)

(Internal friction)

MILLER, Yu. G., Cand. Phys-Math. Sci. (diss) "Investigation of Some Physical Properties of Dilute Stable Solutions on the Basis of  $\alpha$ -Iron." Moscow, 1961, 17 pp. (Central Scientif. Res. Instit. of Ferrous Metallurgy im. I. P. Bardin) 120 copies (KL Supp 12-61, 252).

27292

S/181/61/003/008/022/034  
B102/B202

9,4370

AUTHOR: Miller, Yu. G.

TITLE: Study of ion transfer in metals and semiconductors under the action of an electric Hall field

PERIODICAL: Fizika tverdogo tela, v. 3, no. 8, 1961, 2383-2389

TEXT: The author suggests a new method of determining the ionic charge in semiconductors, metals, and alloys, which is based on the study of ion transfer in the transverse electric Hall field. In this study the author determines the resulting force acting on an ion migrating in the electric field. This resulting force consists of two components: the force of the electric field ( $F_1$ ) and the force of the "electronic wind" ( $F_2$ ).

$F = F_1 - F_2 = eE(Z - nl\sigma)$ , where  $E$  is the field strength,  $n$  the concentration of conduction electrons,  $l$  the mean free path of the conduction electrons,  $\sigma$  the scattering cross section of the electrons scattered by activated ion,  $q = Ze$  is the ionic charge.  $F$  may lie either in the direction of the field or in opposite direction. Ion transfer takes place in

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Study of ion transfer in metals ...

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B102/B202

the direction of  $F$ . In pure metals where the "electronic wind" plays an important part,  $F_2$  predominates and ion transfer takes place into the direction of the anode. In semiconductors the electron concentration is an exponential function of temperature, i.e., also the part of the "electronic wind" is temperature-dependent. It becomes important only at conduction electron concentrations  $n \sim 10^{17} - 10^{19}$ . The reversal in the direction of the transfer of gold ions in silicon takes place at  $1280^\circ\text{C}$ . Below this temperature the gold ions migrate to the cathode. Above this temperature they migrate to the anode.  $F = 0$  if  $n\sigma^* = Z$ . In the method suggested here only one force of the electric field acts upon the ion, i.e., the transverse electric field which is due to the Hall effect is used. The measuring arrangement (the method was experimentally verified) is shown in Fig. 1. In the case of a semiconductor the specimen has the shape of a parallel epiped, in the case of a metal it is a foil. If a constant current of density  $i$  passes through the n-type specimen, and if this specimen is placed in the field  $H$ , the transverse electric field is given by  $E_x = RH i$  where  $R = 1/nec$  is the Hall constant,  $n$  the concentration of the conduction electrons per  $\text{cm}^3$ . In the direction  $E_x$  only one force of the

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S/181/61/003/008/022/034  
B102/B202

Study of ion transfer in metals ...

electric field  $qE_x$  acts upon the ion. The method suggested is the most effective for semiconductors with large Hall constant. As an example the ion transfer of iron in germanium is studied at  $825^\circ\text{C}$ . The specimen used was n-type germanium with a resistivity of  $10\text{--}30\text{ ohm}\cdot\text{cm}$  at room temperature. In the central part and at the two sides of the specimen  $F^{59}$  was electrolytically deposited with a thickness of less than  $1\mu$ . The iron was deposited in the form of  $0.2\text{ mm}$ -wide strips. This results from the fact that the conductivity of iron is 230 times higher. Ohmic contacts were produced by means of a thin copper layer. During the measurement the specimen was in a field of  $5,100\text{ oe}$ . The specimen was heated in the vacuum ( $10^{-4}\text{ mm Hg}$ ) at a d-c density of  $i = 230\text{ a/cm}^2$  in a field  $E = 0.36\text{ v/cm}$ .  $E_x$  was  $0.23 \cdot 10^{-2}\text{ v/cm}$ . For the temperature  $825^\circ\text{C}$  the mobility  $u$  was determined.  $Z$  was determined from  $u$  and the diffusion coefficient  $D$  using the relation  $Z = ukT/De$ . It was found that at  $825^\circ\text{C}$ , Fe diffuses into Ge in the form of trivalent positive ions ( $Z \approx 3$ ). With metals, foils are used in analogous way. The method was practically verified by studying the diffusion of carbon into  $\alpha$ -iron at  $825^\circ\text{C}$ . Finally, the author thanks K. P. Gurov for

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Study of ion transfer in metals ...

S/181/61/003/008/022/034  
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discussion and V. S. Zemskov for making available the specimens. There are 3 figures and 8 references: 7 Soviet and 1 non-Soviet.

ASSOCIATION: Institut metallurgii im. A. A. Baykova Moskva (Institute of Metallurgy imeni A. A. Baykov, Moscow)

SUBMITTED: March 13, 1961

Legend to Fig.1: (1) specimen; (2) pole pieces; (3) probes

Card 4/5

MILLER, Yu.G.; GUROV, K.P.

Investigating ion migration under the action of a Hall electric field. Fiz. tver. tela 3 no.9:2870-2872 S '61. (MIRA 14:9)

1. Institut metallurgii imeni A.A. Baykova, Moskva.  
(Ions—Migration and velocity)  
(Hall effect)

44296

S/119/62/000/012/009/009  
D201/D308

9.3280

AUTHORS: Miller, Yu.G. and Ratnovskiy, V.Ya.

TITLE: The HF pickup of an electric pulse tachometer

PERIODICAL: Priborostroyeniye, no. 12, 1962, 28

TEXT: This is a short description of the front part of the electronic tachometer. It consists of a HF electron tube generator, near the core of the tank circuit coil of which is placed a disk, connected to the revolving shaft. The disk is made of mild steel and has cut-out sectors. The solid section of the masking disk interrupts the HF oscillations, producing a 100% modulation of the HF oscillations, the frequency of which is proportional to the speed of the shaft revolution. The modulated carrier is detected and the frequency of nearly rectangular pulses thus obtained is measured by a frequency meter calibrated directly in rpm. The measurement range is determined by the number of masking sectors and by that of the frequency meter, i.e. is about 10 to  $6 \times 10^5$  rpm. The transducer has small dimensions, the amplitude of output pulses

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The HF pickup ...

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is large, the gap between the masking disk and the coil core is not critical and is of the order of 1-2 mm. There are 2 figures. ✓

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MILLER, Yu.G.

New method of determining the ionic charge in metals and semi-  
conductors. Trudy Inst. met. no.15:11-17 '63. (MIRA 16:9)  
(Metal ions) (Ions--Migration and velocity)

MILLER, Yu.G.

Deduction of a Young's modulus design formula for crystals. Trudy  
Inst. met. no.15:147-150 '63. (MIRA 16:9)  
(Metal crystals--Elastic properties)

OSOKINA, Doriana Nikolayevna; GZOVSKIY, M.V., otv. red.;  
MILLER, Yu.G., red.; MEDER, V.M., red. izd-va; RYLINA,  
Yu.V., tekhn. red.

[Plastic and elastic low-module optically-active materials  
for studying stresses in the earth's crust by the modeling  
method] Plastichnye i uprugie nizkomodul'nye opticheski-  
aktivnye materialy dlia issledovaniia napriazhenii v zem-  
noi kore metodom modelirovaniia. Moskva, Izd-vo AN SSSR,  
1963. 195 p. (MIRA 17:1)

CHUPAKHIN, M.S.; MILLER, Yu.M.

Possible use of mass spectrometry for the detection of impurities  
in the analysis of pure materials (survey). Zav.lab. 27  
no.8:1009-1012 '61. (MIRA 14:7)  
(Mass spectrometry)



BABKO, G.M. [Dabko, H.M.]; MILLER, Yu.M.

Experience of the Poltava Cotton Spinning Factory in the  
application of production norms based on technical factors.  
Lsh. prom. no.4:78 O-D '65. (HIRA 19:1)

ACCESSION NR: AT4042446

S/0000/64/000/000/0132/0136

AUTHOR: Luk'yanov, N. G.; Miller, Yu. Ya.; Eygenbrot, V. M.

TITLE: The development and test results of pneumatic telemetry systems

SOURCE: Vsesoyuznoye soveshchaniye po pnevmo-gidravlicheskoy avtomatike. 5th, Leningrad, 1962. Pnevmo- i gidroavtomatika (Pneumatic and hydraulic control); materialy\* soveshchaniya. Moscow, Izd-vo Nauka, 1964, 132-136

TOPIC TAGS: automation, control system, feedback, telemetry, pneumatic control system, pneumatic telemetry system, pneumomechanical transducer

ABSTRACT: The telemetry systems considered in this paper are intended to transmit information from distant objects to a central dispatching point. Detailed descriptions are given of a nozzle-damper coding device, a relief-probing coding device and a pneumomechanical transducer. The purpose of the tests, which were carried out at the Novoufimskiy neftepererabatyvayushchiy zavod (Novoufimsk Petroleum Refinery), was to determine the operational capacity of the pneumatic measurement systems, the errors in the transmission of the meter readings, and the amount of time taken by the signal to pass from the instant the call is made to the appearance of the reading on the secondary instrument. From the results of the tests it is concluded that the use of pneumatic telemetry systems has practical importance.

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ACCESSION NR: AT4042446

tance. Such systems are distinguished by their highly accurate transmission of the meter readings, by being completely fire- and explosion-proof, and by their reliability and immunity to noise. Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 29 Jan 64

ENCL: 00

SUB CODE: IE

NO REF SOV: 001

OTHER: 000

Card 2/2

MILLER, Zygmunt, mgr.inz.

The agricultural machinery exhibition in Paris. Przegl techn 81  
no.23:18-19 Ja '60.